

## Patent Claims

- 1) A method for the detection of methylated DNA against a background of unmethylated DNA is hereby characterized in that
  - a) the double strands of the DNA to be investigated are separated and then reassociated with the formation of hemimethylated double strands,
  - b) the hemimethylated positions that are formed in step a) are converted into fully methylated positions by means of an enzyme,
  - c) the methylated DNA is analyzed.
- 2) The method according to claim 1, further characterized in that DNA from body fluids is investigated.
- 3) The method according to claim 2, further characterized in that DNA from serum is investigated.
- 4) The method according to at least one of claims 1 to 3, further characterized in that the DNA of step a) is fragmented.
- 5) The method according to at least one of claims 1 to 4, further characterized in that a maintenance methyltransferase is used in step b).

- 6) The method according to claim 5, further characterized in that DNMT1 is used as the maintenance methyltransferase.
- 7) The method according to at least one of claims 1 to 6, further characterized in that steps a) and b) are repeated once more or several times.
- 8) The method according to at least one of claims 1 to 7, further characterized in that a heat-stable methyltransferase is used.
- 9) The method according to at least one of claims 1 to 8, further characterized in that the DNA in step c) is first converted by means of a bisulfite reagent or enzymatically.
- 10) The method according to claim 9, further characterized in that the converted DNA is analyzed by means of one of the following methods: MSP, heavy methyl, MsSNuPE, methyl light.
- 11) Use of one of the methods according to at least one of claims 1-10 for the diagnosis or prognosis of cancer disorders or other diseases associated with a change in the cytosine methylation status, for predicting undesired drug effects, for establishing a specific drug therapy, for monitoring the success of a drug therapy, for distinguishing cell types or tissues and for investigating cell differentiation.

12) A method for the detection of unmethylated DNA against a background of methylated DNA is hereby characterized in that

- a) the double strands of the DNA to be investigated are separated and then reassociated with the formation of hemimethylated double strands,
- b) the hemimethylated positions that are formed in step a) are converted into unmethylated positions by means of an enzyme,
- c) the unmethylated DNA is analyzed.